

Listing and Amendments to the Claims

This listing of claims will replace all previous versions and listings of claims in this application:

1.(currently amended) A method of operating a communication system comprising a primary station ~~(10)~~ and a plurality of secondary stations ~~(12a,12b,12c)~~, the method comprising:
the primary station ~~(10)~~ exchanging radio messages ~~(38)~~ with the secondary stations over a number of radio channels ~~(14a,14b)~~ in accordance with a predetermined protocol ~~(36)~~,
monitoring the capacity of said channels; and
controlling ~~the registration of at least one secondary station to a channel used by at least one enquiring secondary station (12a)~~ at least in part in dependence on said monitored capacity of said channels.

2.(currently amended) A method according to claim 1, wherein the monitoring of channel capacity comprises:
comparing the number of secondary stations ~~(12a,12b,12c)~~ registered per channel ~~(14a,14b)~~ against a predetermined threshold, and
blocking registration for those channels having a number of secondary stations registered per channel equal to or above the predetermined threshold.

3.(currently amended) A method according to claim 2, wherein ~~the a~~ monitored channel ~~(14b)~~ having the lowest number of registered secondary stations ~~(12c)~~ is used to register an enquiring secondary station.

4.(currently amended) A method according to claim 1, wherein beacon signals ~~(40)~~ are transmitted on each radio channel ~~(14a,14b)~~, and wherein the capacity of each channel is monitored by monitoring the number of time slots ~~(42)~~ available per frame time for that channel.

5.(currently amended) A method according to claim 4, wherein ~~the an~~ enquiring secondary station requesting guaranteed time slots ~~(46)~~ is allocated a radio channel having available unused timeslots for said request.

6.(currently amended) A communication system comprising a primary station-~~(10)~~ and a plurality of secondary stations-~~(12a,12b,12e)~~, wherein the primary station-~~(10)~~ has means-~~(29)~~ for exchanging radio messages-~~(38)~~ with the secondary stations over a number of radio channels in accordance with a predetermined protocol, means-~~(20,27)~~ for monitoring the capacity of said channels and means-~~(20,25,27)~~ for controlling registration of at least one secondary station to a ~~the channel used by at least one enquiring secondary station~~ at least in part in dependence on said monitored capacity of said channels.

7.(currently amended) A primary station-~~(10)~~ for use in a communications system comprising a plurality of secondary stations, wherein the primary station has means-~~(29)~~ for exchanging radio messages-~~(38)~~ with the secondary stations over a number of radio channels in accordance with a predetermined protocol, means-~~(20,27)~~ for monitoring the capacity of said channels and means-~~(20,25,27)~~ for controlling registration of at least one secondary station to a ~~the channel used by at least one enquiring secondary station~~ at least in part in dependence on said monitored capacity of said channels.

8.(currently amended) A primary station as claimed in claim 7, wherein the means for exchanging radio messages comprises a communication module-~~(29)~~ having a plurality of transceivers-~~(29a,29b,29e)~~ coupled-~~(35,27)~~ to said monitoring and control means-~~(20)~~, and wherein each transceiver operates a single radio channel.

9.(currently amended) A primary station as claimed in claim 7 ~~or claim 8~~, wherein the monitoring means-~~(20)~~ monitors ~~the~~ available timeslots-~~(42)~~ between periodic beacon signals ~~(40)~~ transmitted by transceivers on respective channels, and wherein the control means-~~(20)~~ allocates a radio channel having available unused timeslots to ~~the~~ at least one enquiring secondary station.

10.(currently amended) A primary station-~~(10)~~ as claimed in claim 7, wherein the predetermined protocol is the ZigBee radio protocol.

11.(currently amended) A computer program-~~(25)~~ comprising code that when executed on a programmable device forming a primary station causes it to carry out the steps of claim 1.

12.(currently amended) A computer program-~~(25)~~ comprising code that when executed on a computer linked to a primary station causes it to carry out the steps of claim 1.

13.(currently amended) A computer program-~~(25)~~ on a carrier-~~(24)~~ carrying code that when executed on a programmable device forming a primary station causes it to carry out the steps of claim 1.

14.(currently amended) A computer program-~~(25)~~ on a carrier ~~24~~-carrying code that when executed on a computer linked to a primary station causes it to carry out the steps of claim 1.

15.(new) The primary station of claim 7 operating a plurality of ZigBee piconets simultaneously in the same location, each piconet operating on a separate radio channel, wherein the means for monitoring includes a microprocessor to obtain information about each piconet and monitor a number of members of each piconet, and which radio channels are in use.